Interview with Dr. Lon Jones

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Nasal Health is an extremely important topic these days. It seems like every second person struggles with some form of nasal disfunction, like Sinusitis, Hayfever or a Post-nasal drip. More than 90 percent of all infections enter the body through the nose, so it makes sense that we do everything we can to help the nose to do its job as effectively as possible. Dr. Lon Jones is an expert on how to do this in a drug-free manner.

> Dr. Lon, You talk about our body's natural defences. Why, and what does that mean?

By training, I'm an Osteopathic Physician, and in the United States, Osteopathic Physicians have the same practice rights as MDs do internationally. But, we also have training that helps us try and focus on the origin of problems, and especially their Musculo-skeletal origins, but it's not exclusive of that.

So when I started practising medicine, it coincided with the time that they started using oral rehydration to treat people with Cholera, and I thought that

was a really good idea, because if you can “keep your tank full” by drinking oral rehydration, then you cut the loss of life from Cholera substantially, as they found out in Bangladesh and other places where they have Cholera. And, some people in the United States use this for a treatment of people with diarrhoea in Indian reservations, and it worked there too. So I started using it, and it’s a way to support the defence of your body against things that bother your G.I. tract, because when you eat something, whether its bacteria, bad food, whatever, your body’s response to that is to try and wash it out, so you get diarrhoea. And we have all kinds of drugs that stop the diarrhoea, but, if it’s a defence, you really shouldn’t be stopping it – because there’s a survival benefit that goes with that defence.

By continuing with that thought in mind, a runny nose, similarly, is your body trying to get rid of what’s irritating your nose. Again, we have all types of drugs to stop that response, but, if a runny nose is trying to clean out something that is irritating our nose, it’s something that we should be supporting.

What’s so special about your nasal spray. Isn’t rinsing with salt water a good enough method of cleaning the nose?

I don’t think that saline does quite as much to “wash” the nose, as it does just to rinse it. By the same analogy, if you wash your hands with water, it helps a little bit, but it helps a lot more if you put some soap on. So, one of the things I was trying to do was to figure out what we could use for “soap”, and spray it in our nose.

I figured that out, probably a day after my wife gave me an ultimatum, because our granddaughter was having ear infections, and in her experience as an educator, when she goes to her special education class and says “how many of you kids have had tubes in your ears?”, everybody raises their hand. You know, she knows that something is wrong!

And what happens with kids that have chronic ear infections and they put tubes in their ears, is that, during a critical period in their life when they are learning language and sounds, they have all this fluid in their middle ear that accumulates because of these recurring ear infections. And this fluid interferes with the sounds to their developing brain, and they miss out on that window of learning, and they wind up in special ed. which is where my wife helped them

to learn language. So it was critical that, when our granddaughter started having recurring ear infections, that we do something about it.

That's when I read about (Prof.) Matti Uhari's work in Finland, using chewing gum with xylitol, and he found that these kids that chewed xylitol gum five times a day had a 40% reduction in ear infections. And I went home exuberant and I said: "All we have to do is get Heather to chew gum!", and she says – "She doesn't have any teeth! How's she going to chew gum, five time a day?"

And so, I thought to myself – "the bacteria that cause ear infection live at the back of the nose. They're not in the mouth, they're not in the stomach. You know, why don't we put it where the bacteria are, because, Matti Uhari and his colleagues in the study pointed out that xylitol works on the bacteria that cause ear infections. Well those bacteria are in the back of the nose! Why not put the xylitol there?"

So I got some xylitol and put it in a bottle of saline, and I told Mom and Dad to put it in Heather's nose every time they changed her diaper. And her ear infections went away…

Two months later, she had another ear infection, and they found out that was because the lady at day-care, where she was getting all these ear infections, that normally changed her diaper, had been replaced, and the new one wasn't washing Heather's nose. So she got another ear infection. But that went away when they started washing her nose again regularly. So, about two months after that, my son came to me and he said: "That stuff is pretty good. You oughta get a patent on it!". So I did that.

So what were your early results using Xlear Nasal Spray?

I had a bunch of other kids in my practice that had problems like Heather had with recurring ear infections. And I got 10 of these children and got their parents to wash their nose regularly. Comparing the incidence of their ear infections before they started using Xlear, and after they had been using it for an average of about 11 months, and the incidence of their ear infections had dropped by over 90%, and I thought that was pretty significant.

How would you classify Xlear Nasal Spray in medical terms?

I went to the Food and Drug Administration in the United States, that's our agency that controls drugs. I called them and said I have a really neat way to wash your nose. The FDA people said we don't have a category for nose washing. What does that do? And I said well if you watch your nose regularly, all the problems that come from your nose are less. And they said what does that mean then? I said well ear infections start in your nose, 90% of them don't happen from my own experience. Sinus infections start in your nose, they get better. Allergies start in your nose, they get better. Asthma starts in your nose, that gets better. They said then it's a drug.

So I tried for two years to make it as a drug. But as long as xylitol is an uncontrolled substance, and it is, it's a natural substance which most people can get at their health food store. They have been doing that and using it for diabetes as a non-calorie sugar, which is what it is and how it’s been marketed.

It's in chewing gum because it prevents tooth decay. You can put it in your tea and it'll help prevent tooth decay. So it's readily available and there weren't any drug companies interested in it because they have to make a profit off their drugs. So, to answer your question, Xlear Nasal Spray is a nose wash. It's soap for your nose.

Are anti-histamines a help or a hindrance when it comes to nasal health?

There are three studies that I'd like to refer to. The first was done by the National Center for Health Statistics in the United States. And it looked at the incidence of your infections from two points - early 1970s and early 1980s. It showed about a 5% increase in ear infection. The second study was one done by the CDC which also started also in 1970 and went to the mid 1990s. It showed a similar increase in the incidence of Asthma. The best study that was an even longer term was done at Charleston, South Carolina, and was published online in Pediatrics last year. It showed, even before 1970, a relatively stable incidence of Asthma. Beginning 1970, they had in different populations about 5-10% increase in Asthma, up until the year 2000. And they concluded in their study that they didn't know why. There was no environmental, or any other reason that they could see to explain why these increases began in 1970.

But two things happened in 1970 that I think contribute to this problem. Number one – anti-histamines were made available over the counter, and number two, they were made available through government programs to physicians to give to indigent people. So I began practicing in 1974 and I would have drug salesmen come to me with boxes of antihistamines and decongestants to give to my poorer patients that couldn't afford it. And we did. It was the drug of the time. And now we're seeing the results of that, I'm reasonably sure. Because again, when you turn off histamine, which is the body's defence for cleaning the nose, where do the pollutants go that are in your nose if you stop the washing. They stay there and they cause more problems.

Are there good bacteria in the nose, and what is it that makes them good?

There are also good bacteria in the nose. They are considered good bacteria because when they grow they provide a shield so that the bad bacteria can't hold on. And yes, good bacteria are also affected by xylitol because they're washed out along with the bad ones.

But, the good bacteria adherence is not affected by the xylitol as much as the Strep *pneumo*, the Moraxella *catarrhalis*, and the Haemophilus influenza are. The important aspect of all this is the following: If we don't kill bacteria they don't develop resistance. Xylitol does not kill the good bacteria or the bad bacteria. All it does is say, “shape up or ship out!”

How often should one use Xlear?

If you don't have a major problem with your nose, use it twice a day. Put it with your toothbrush and wash your nose regularly. For people who smoke, just one cigarette a day paralyzes the mucociliary apparatus, so the normal 24/7 sweeping mechanism is not working anymore. They would need to use Xlear more often.

For kids with ear infections - in my own study, I had them using xylitol spray every time they got their diaper changed, that's probably 5, 6, 7 times a day. In the Czech study, they used it regularly three times a day. I got a 90% reduction in ear infections using it as often as I did. The Czechs using it three times a day,

got a 60-plus% reduction in their childrens' ear infections. Those things of course correlate very well with the dental studies that have been done for the last 20 years. They showed that the higher the concentrations and frequency of use, the better the result in preventing tooth decay. The only way to get those concentrations in the nose is to spray it regularly with Xlear, with this xylitol nasal spray.

Does xylitol have a toxicity level, and is it possible to overdose on Xlear?

Toxicity studies with xylitol using it parenterally and using it orally have shown it not to be a problem. When I was asked by the Food and Drug Administration about its use, nasally, I pointed out to them that xylitol is not absorbed in the nose. It stimulates the washing and it winds up in your stomach. If a person, as is recommended, uses two sprays of xylitol in each side of the nose, they get a minuscule amount of xylitol. If they do that, every hour, 24 hours a day, they will get about half a gram of Xylitol, which is about equivalent to what's in a plum. Putting that in perspective, your body makes about 10-15g of xylitol every day in your liver, so half a gram is certainly not going to hurt you.

Do You ever prescribe nasal steroids, and if so, why?

Nasal steroids are one of the things that I try and get people off sooner than later. We've already talked about anti-histamines and how they block the normal cleaning of your nose, and just about everybody is aware that steroids essentially turn off our immune system, and turning off your immune system, this thing that is designed by nature to protect us from illness, does not seem a very wise thing to do.

My recommendation first off is to wash your nose regularly and get off the nasal steroids. While I say that, there are, in my practice and in my experience, several people that I know that have problems to the degree that they rely on a nasal steroid, and I have prescribed nasal steroids on a few occasions. But when you accompany them with instructions to keep your nose clean by using Xlear regularly, you're eliminating the vast majority of the side effects of the steroid, because while you're turning off the nasal defence mechanism with the steroid, you're turning it back on again by using Xlear regularly.

Which types of bacteria are effectively “disarmed” by xylitol?

We've known about what it does to the bacteria that cause tooth decay, Strep. *mutans.* Strep. *mutans* is a cousin to Strep. *pneumo*, and shares all of the genetic properties. They've actually found that Xylitol decreases the ability of the Strep. *mutans* to hang on to the dental plaque that it has made. Clostridium *difficile* is decreased profoundly by a minute amount of Xylitol. People in northern Europe are using xylitol together with heavy antibiotic use, to prevent overgrowth of Clostridium *difficile* in those people that require antibiotics.

The Japanese are using Xylitol in people with Atopic Dermatitis to help prevent the growth of Methicillin-resistant Staph. *aureus* on their skin. So it's not just the nasal bacteria that are addressed by Xylitol, but an increasing number of other major pathogens that have caused and are causing major problems with our fight against bacteria.

Could you please explain how the nose traps irritants (the Mucociliary elevator effect), and how it cleans itself.

The nose cleans itself out in two basic ways. The first and the simplest is what physicians call the mucociliary elevator. And this is the combination of cilia, which are microscopic hairs, and mucous. The mucous works to trap all of the pollutants that we breathe in every day, all the time. The mucous is sticky and it holds onto these microbes. The turbinates are the things in the back of the nose that make the air turbulent, so that the particles that we breathe in are exposed to the mucous in a variety of ways, and the mucous hangs on to them.

Then there are the cilia that are underneath the mucous, and these are microscopic hairs that are constantly sweeping, and they do this 24 hours a day, seven days a week. The mucous is swept to the back of the nose where we swallow it, and we do that without ever noticing. We're doing it because it's a normal process.

Now, there are some things that interfere with this normal process. Dry air makes the mucous thicker, so the cilia can't move it as well. Smoking paralyzes the cilia, so don't smoke. There's no good reason to smoke, and there are many good reasons not to! Try and keep yourself well hydrated to keep the mucous thinner.

But on occasions where cleaning out the mucous is a problem – here's an example: It's a bit like sweeping our kitchen floor. We sweep the kitchen floor 24 hours a day, seven days a week. Occasionally, there may be a spill that we can't sweep up. So we need to add a bit of soapy water, and mop it up. In our nose, this mopping is triggered by a substance called histamine that is released in the back of the nose when it recognizes that there is something that is building up that the body doesn't like.

Histamine does four things:

Firstly, it opens the blood vessels so they leak more. That fluid percolates between the cells in the back of our nose. It comes up under the cilia and it lifts the mucous off the cilia and sweeps it out easier. So it's very much like mopping our nose.

The second thing that histamine does is to open the little cells so that they make more mucous, so it replenishes the supply of mucous, and its moister mucous because of the additional fluid.

The third thing it does - it's an irritant, so we sneeze more and that gets rid of the mucous. If you've ever seen a child with a congested nose sneeze, they all of a sudden have twin tracks of mucous down below their nose.

The fourth thing it does is shut off the bronchi, so that we breathe less and have less of a chance of this pollution up here in our nose where we have a lot of defences to deal with it, getting down into our lungs where we have far fewer defences to deal with it!

So histamine is really the body's defensive trigger to help wash the nose. Now, doctors and scientists look at how things work. And in asking the question how, they found histamine back in the 30s. And in 1940, they developed anti-histamines that turn off that process. But turning off that process means that your body doesn't respond, and if your body doesn't respond to washing this stuff out, it's still there, and it's going to cause more problems. And that indeed has been our experience since the 1940s. And especially since the 1970s, when these drugs were made available over the counter and didn't require a doctor's prescription. You could, and still can go and buy them yourself.

But when you take an anti-histamine, you're blocking this important process. When you take a decongestant, you're shutting off the blood vessels so they can't leak anymore. When you take a nasal steroid that, fortunately, is just by

prescription, you're putting your immune system to sleep, so it doesn't care if your nose is polluted.

Can you explain the difference between a conventional medical approach and a preventive approach to health. Where does Xlear fit in?

In the United States about 100 years ago, there was a doctor named Sarah Joe Baker who worked in New York. She was one of the first women who graduated from medical school in the United States. She worked with the Public Health Department in New York, and her area of the city was the centre of a typhoid and cholera epidemic, where thousands of the children in the city were dying every year as a result of the epidemic. Well, Dr. Baker looked at this and she addressed the problem by teaching mothers and their older children how to better wash their hands before and after taking care of the baby. And, in part, because of that, the epidemic went away gradually. Now in the middle of her success with that epidemic, 30 Brooklyn paediatricians petitioned the mayor's office to stop her work because it was hurting their practices!

Now we've gone for 100 years supporting the paediatricians, and we need to go back to looking at how to support Dr. Baker instead, and that point of view of how to prevent problems - because if we prevent problems, we're ahead, and we don't have to worry about the expense of treating them.

And that's what we're trying to do with Xlear, because Xlear stimulates nasal washing. It helps reduce the problems that come from a polluted nose. Those problems are ear infections in little children, sinus infections in just about everybody, allergies, asthma, bronchitis, they all come from bacteria and pollutants that live in the back of the nose.

How does a steroid or cortisone work?

Steroids help turn off our immune system so that it doesn't respond to things that are irritating your body. They are very useful at times. One good example is with organ transplants because they will turn off your immune system's recognition that this transplanted organ is really somebody else's, so they're very useful then.

But when we use them to turn off a defence, then what we are defending against has a chance to bite us. And in the case of organ transplants, these people are more likely to get cancer, because their immune system is not working as well, because of the steroid.

When we use a steroid in our nose, to essentially turn off our immune system, then our immune system does not recognize infections, irritants and allergens in our nose, and it doesn't respond by turning on histamine. Now if you want those pollutants in your nose, take a steroid. It'll turn off the whole process. But if you want to honour the defence of the runny nose, and of how your nose normally cleans itself out, then you can't use a steroid nasally and honour that defence. And the best way to honour a defence is to try and support what it's trying to do. And that's what Xlear does when it's used regularly. It stimulates our own normal nasal washing and cleans out those problems so that they're not there to bother us.

How does xylitol "neutralise" the bad bacteria?

Xylitol combats bacteria by decreasing the ability of the bacteria to hold on to our cell surfaces. Now that's a new thought in dealing with bacteria. And it's not one that has been pursued because it doesn't make very much money.

But if you look at bacteria, and the one that we know the most about is E. *coli*. - if you look at E. *coli* molecules, they're covered with millions of arms and legs all over the place. These arms and legs have little hands that are fixed to hold on to a specific molecule. And the one that we know the most about is Mannose, which is a sugar very much like the sugar that we use in our diet. So you have all these little hands that are conformed to fit to Mannose.

Now, if you put something into those little hands to block that adherence, then those bacteria can't hold on, and that's what xylitol does because it looks like sugar. The Xylitol molecule can bend, rotate, twist and conform to fit into these little hands, and so the little hands aren't able to hold onto our cell surfaces or each other! And if they don't hold on, they're washed out.

That's what happens in our noses when we use xylitol regularly. A 5% solution of xylitol in your nose decreases the ability of Strep. *pneumonia*, the major problem-causing bacteria that live in our nose, by 68%, and H. *flu* by 50%. So those bacteria are going to get washed out if you use xylitol regularly in your nose to stimulate washing.